

Nutrition Fact Sheet

An information update for WIC staff

■ MATERNAL NUTRITION: GESTATIONAL WEIGHT GAIN

Successful pregnancy outcome is largely determined by the birth of an infant weighing more than 5.5 pounds (or 2500 g). Birth weight is affected by both the mother's total weight gain during pregnancy and her rate of weight gain throughout pregnancy. Weight gain in early pregnancy contributes primarily toward the mother's tissues that will support the baby's growth. This is a vital part of weight gain, particularly with multiple fetuses. Weight gain in the second half of pregnancy contributes primarily to the growth of the baby. Recommendations for total gestational weight gain are based on a woman's prepregnancy weight-for-height status and the presence of multiple fetuses.

OPTIMAL GESTATIONAL WEIGHT GAIN VARIES

There is a wide variation in the amount of weight gained by women who give birth to live, optimally grown infants. Women who gain as little as 16 pounds (7.3 kg) or as much as 40 pounds (18.2 kg) do give birth to healthy babies. This wide variation indicates that other factors also have an impact on the birth weight and health of the newborn.

Low Gestational Weight Gain

Women who do not gain enough weight in the second and third trimesters of their pregnancy are more likely to give birth to small-for-gestational-age infants (full-term infants weighing less than 5 lbs. 8 oz. or 2500 grams at birth). After birth, these babies may not gain weight at an adequate rate and may also show delayed development. There is also a direct link between low weight gain and fetal or infant mortality. The effect of first-trimester weight gain or weight loss on the health of the newborn is unclear.

Very High Gestational Weight Gain

Women who gain too much weight during pregnancy are more likely to have a high-birth-weight infant (more than 8 lbs. 12 oz. or 4000

grams). This, in turn, increases the risk of labor and delivery problems such as forceps or cesarean delivery and other birth trauma.

Weight-for-Height Status

The effect of gestational weight gain on fetal growth is modified by the mother's prepregnancy weight for height. Weight gain has far more of an effect on the growth of a fetus in thin women than it does in overweight and obese women. In addition, infants born to women with low prepregnancy weight for height are typically smaller than infants born to women with high prepregnancy weight for height, even when the women gain the same amount of weight during their pregnancies.

For these reasons, women with low prepregnancy weight for height need to gain more weight during pregnancy than those who are overweight or obese. This is reflected in the recommended weight gain ranges listed in *Table 2*.

Use *Table 1* to determine a woman's prepregnancy weight status. Her recommended gestational weight gain can then be determined from *Table 2*. (These are the same tables currently used in WIC clinics.)

Table 1

Prepregnancy Weight Status

Height*	Underweight** (≤90% of standard weight for height)	Desirable Weight** (91%-120% of standard weight for height)	Overweight** (121-135% of standard weight for height)	Obese** (≥135% of standard weight for height)
56	92 or less	93-122	123-136	137 or more
57	94 or less	95-125	126-139	140 or more
58	96 or less	97-128	129-143	144 or more
59	99 or less	100-132	133-147	148 or more
60	102 or less	103-136	137-151	152 or more
61	104 or less	105-139	140-156	157 or more
62	108 or less	109-144	145-161	162 or more
63	111 or less	112-148	149-165	166 or more
64	115 or less	116-154	155-172	173 or more
65	119 or less	120-158	159-176	177 or more
66	122 or less	123-163	164-183	184 or more
67	126 or less	127-168	169-188	189 or more
68	130 or less	131-173	174-194	195 or more
69	133 or less	134-178	179-199	200 or more
70	137 or less	138-182	183-204	205 or more

Adapted from the Metropolitan Life Insurance Actuarial Tables, 1959

* Height in inches, without shoes

** Weight in pounds, based on client's weight immediately prior to conception

Table 2

**Recommended Ranges for Total Weight Gain for Pregnant Women Carrying Singletons
(By Prepregnancy Weight Status)**

Prepregnancy Weight Status	Recommended Total Gain	
	<i>pounds</i>	<i>kilograms</i>
Underweight	28-40	12.5-18
Desirable	25-35	11.5-16
Overweight	15-25	7.0-11.5
Obese	≤15	≤6.8

MULTIPLE FETUSES

In twin pregnancies, infant birth weight of 5½ pounds or more is considered optimal. To achieve this, women should gain a total of 40 to 45 pounds.

Rate of weight gain is also important. Weight gain below 0.85 pounds per week before 24 weeks gestation is associated with poor growth and an increased incidence of sick infants.

Weight gain later in pregnancy cannot compensate for the initial slow rate in twin pregnancies.

The recommended rate of weight gain during twin gestation is also based on the mother's prepregnancy-weight status. Weight gain before 20 weeks should also be encouraged. Underweight women should gain 1.75 pounds per week starting at 20 weeks gestation. Women with a desirable prepregnancy weight should gain 1.5 pounds per week in the second half of pregnancy. Specific recommendations have not been made for obese or overweight women.

Experts also have not made specific recommendations for weight gains for women carrying triplets or higher-order multiple fetuses.

GUIDELINES FOR SINGLETON PREGNANCIES

The goal for weight gain should be a range, not a single number. Counseling should also promote healthy eating to achieve the recommended weight gain. **Women should aim for a steady rate of gain which follows the curve on the weight gain chart appropriate for their prepregnancy weight status.** During the second and third trimesters, the recommended rate of gain is approximately 1 pound (about 0.4 kg) per week for women with a desirable prepregnancy weight. Women who were underweight at conception should try to gain slightly more than 1 pound (about 0.5 kg) per week, while overweight women need to gain about 1 pound (about 0.3 kg) per week.

The "Range of Prenatal Weight Gain" chart (WIC-4) used in WIC clinics is useful for educating women about appropriate weight gain. With a brief explanation, women will be able to understand the concept of maintaining their weight gain within the shaded range.

A slightly lower or higher rate of weight gain than recommended is not cause for alarm, as long as a progressive increase in weight approximates the recommended rate of gain. Gains of less than 1 pound (about 0.5 kg) per month for obese women and less than 2 pounds per month (about 1 kg) for women of normal weight require evaluation. Gains greater than 6.5 pounds (about 3 kg) per month also should be investigated. Once measurement error is eliminated as a reason for inappropriate weight gains, the real cause should be determined. If it is determined that inappropriate weight gain is not the result of overeating or under-eating, then a woman should be referred to her physician for evaluation. If inappropriate weight gain is the result of dietary behaviors, then corrective actions should be developed and implemented jointly with the woman. The plan may include counseling on how to modify her food intake or activity pattern.

Any sudden increase in weight may be due to fluid retention in the tissues, called edema. Neither the calories nor the salt intake of women with edema should be restricted.

References

- "Nutrition During Pregnancy and Lactation: An Implementation Guide." National Academy of Sciences. National Academy Press, Washington, D.C., 1992.
- "Nutrition During Pregnancy: Weight Gain, Nutrient Supplements." National Academy of Sciences. National Academy Press, Washington, D.C., 1990.
- "Maternal Weight Gain: A Report of an Expert Work Group." Maternal and Child Health Bureau, Health Resources and Services Administration, Public Health Service, U.S. Department of Agriculture, National Center for Education in Maternal and Child Health, Arlington, Virginia, 1997.